

### **Claims as Pending**

1. A method for treating damaged or scarred myocardial tissue, said method comprising administering to said damaged or scarred tissue a cellular suspension containing mesenchymal stem cells.
2. The method of claim 25, wherein at least one mesenchymal stem cell has been induced to differentiate into a cardiomyogenic cell.
3. The method of claim 1, wherein said method causes an angiogenic response.
4. The method of claim 2, wherein said mesenchymal stem cells have been cultured for at least 7 days.
5. The method of claim 2, wherein said mesenchymal stem cells have been co-cultured with cardiomyocytes.
6. The method of claim 1, wherein said mesenchymal stem cells are autologous.
7. The method of claim 2, wherein said differentiation is induced by contacting said mesenchymal stem cells with 5-azacytidine or an analog thereof, prior to administration.
8. The method of claim 7, wherein said 5-azacytidine or said analog thereof is present at a concentration of 1 to 100  $\mu$ M.
9. The method of claim 8, wherein said 5-azacytidine or said analog thereof is

present at a concentration of 10  $\mu$ M.

10. The method of claim 1, wherein said mesenchymal stem cells are isolated from bone marrow.

11. The method of claim 1, wherein said administering is by injecting.

12. The method of claim 1, wherein said method improves cardiac function as measured by the cardiac ejection fraction.

13. The method of claim 1, wherein said mesenchymal stem cells are not passaged.

25. A method for treating damaged or scarred myocardial tissue, said method comprising administering to said damaged or scarred tissue a cellular suspension comprising mesenchymal stem cells that have been cultured *ex vivo*.

26. The method of claim 25, wherein said mesenchymal stem cells are autologous.

27. The method of claim 25, wherein said mesenchymal stem cells are isolated from bone marrow.

28. The method of claim 25, wherein said administering is by injecting.

29. The method of claim 25, wherein said method improves cardiac function as measured by the cardiac ejection fraction.

30. The method of claim 25, wherein said method causes an angiogenic response.